

**Mumbai University**

**Question Paper**

**[IDOL – OLD COURSE]  
(MAY – 2018)**

**PAPER - II**

**INTERNET  
TECHNOLOGIES**

Time: 3 Hours

Total Marks: 100

N.B.: (1) Question No. 1 is Compulsory.

(2) Attempt any four from Question Nos. 2 to 7.

(3) Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.

(4) Answer To The Same Question Must Be Written Together.

(5) Number To The Right Indicates Marks.

(6) Draw Neat Labeled Diagrams Wherever Necessary.

**Q.1 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) Write a short note on ARP. (5)
- (B) Write a short note on Marshalling and Unmarshalling. (5)
- (C) Explain data transfer in WLAN using Infrared technology. (5)
- (D) Explain the three way hand shake method for TCP connection Establishment. (5)

**Q.2 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) In case of OSPF Protocol, explain the following Terminology: (8)

- (i) Area
- (ii) Metric
- (iii) Link

*What different types of link exists? What is the purpose of each link type?*

- (B) Explain the different timers used by Routing Information protocol. (6)

- (C) What is fragmentation? Why is it required to fragment an IP datagram? Explain the functions of the following fields related to fragmentation in an IP datagram: (6)

- (i) Identification
- (ii) Flags
- (iii) Fragmentation Offset

*Explain fragmentation offset with an example.*

**Q.3 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) What are the different states for transmission control protocol? What are the states which the TCP client can attain? A TCP connection is in the FIN-WAIT-1 state. The following events occur one after another: (8)

- (i) An ACK segment is received.
- (ii) A FIN segment is received.
- (iii) Time-out occurs.

*What is the state of the connection after each event? What is the action after each event?*

- (B) Write a short note on path vector routing. (6)

- (C) Explain the Routing Information Protocol Message format. A router has the following RIP routing table: (6)

Destination	Hop Count	Next Hop
Net 1	4	B
Net 2	2	G
Net 3	1	F
Net 4	5	G

*Show the Response Message sent by this Router?*

TURN OVER

**Q.4 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) Write the programs for the following using RMI: (8)
- (i) To invoke a remote method to find the factorial of a number.
  - (ii) To invoke a remote method to reverse a string.
- (B) A router with IP address 125.45.23.12 and Ethernet physical address 2345AB4F67CD has received a packet for a host destination with IP address 125.11.78.10 and Ethernet Physical address AABBA24F67CD. Show the entries in the ARP request packet sent by the router. Assume no subnetting. (6)
- (C) Enumerate the benefits of Wireless LAN. (6)

**Q.5 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) What are the different types of messages used by Border Gateway Protocol? Explain the Border Gateway Protocol Header. Explain the fields of Open message packet. (8)
- (B) With the help of a neat diagram describe the RMI architecture. (6)
- (C) A TCP connection is in the ESTABLISHED state. The following events occur one after another: (6)
- (i) The application sends a "close" message.
  - (ii) An ACK segment is received.
- What is the state of the connection after each event? What is the action after each event?

**Q.6 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) With reference to CORBA explain the following in detail: (8)
- (i) Stubs and Skeleton.
  - (ii) Interface Definition Language (IDL).
- (B) Distinguish between object request broker and remote procedure call. (6)
- (C) How is wireless LAN setup? Explain any one architecture to setup wireless LAN. (6)

**Q.7 ATTEMPT THE FOLLOWING QUESTIONS: (20 MARKS)**

- (A) What is transmission control block (TCB)? Explain any eight common fields which can be included in TCB. (8)
- (B) Explain the difference between frequency hopping spread spectrum and direct sequence spread spectrum. (6)
- (C) Explain data transfer in WLAN using Infrared technology. (6)
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